DOMINICA.

ANNUAL REPORT

OF THE

Department of Agriculture

FOR THE YEAR

1950

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REPORT ON THE WORK OF THE DEPARTMENT OF AGRICULTURE

FOR THE YEAR

1950

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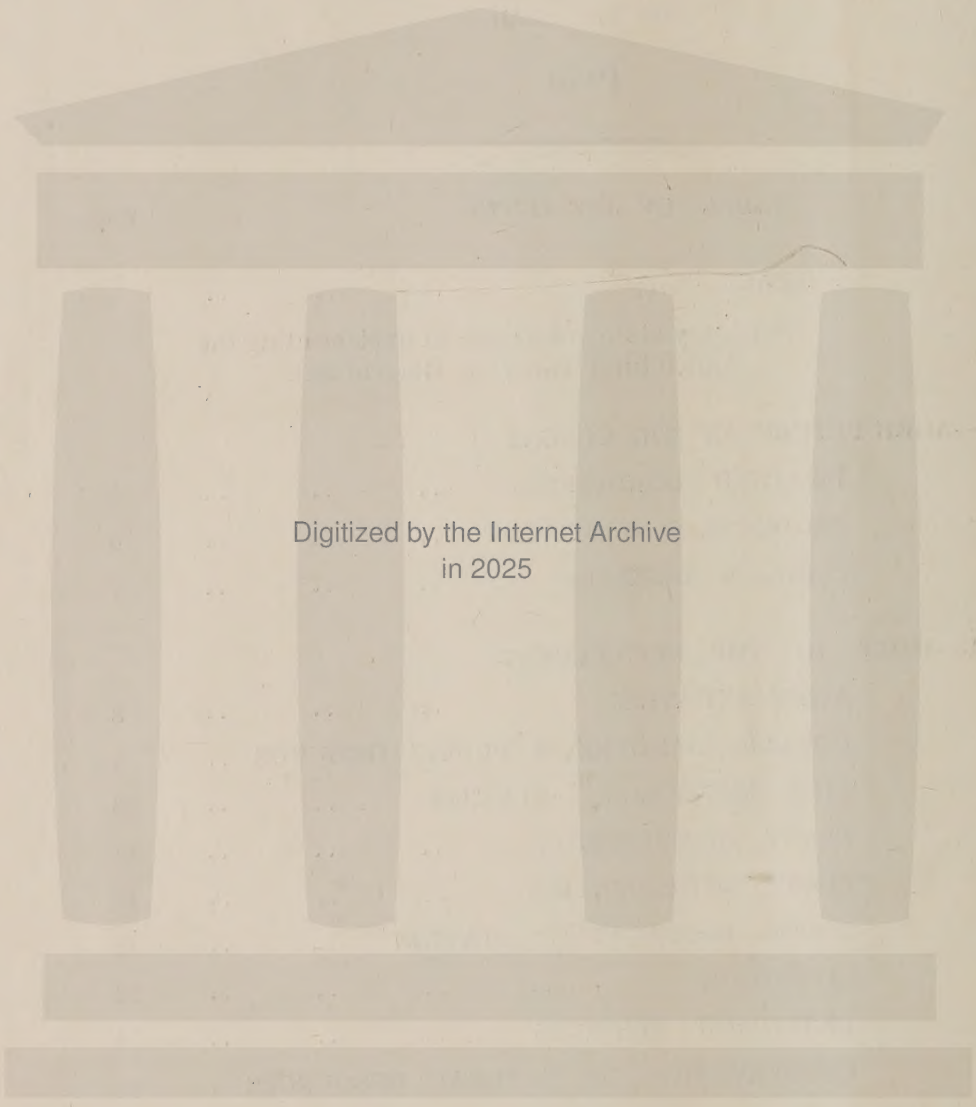

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ANNUAL REPORT

OF THE

DEPARTMENT OF AGRICULTURE

DOMINICA

1950

PREFACE

Summary of Progress made in implementing the Agricultural Policy of Government.

1. *Conservation of Natural Resources.*

(i) To protect, manage, control the use of and improve all forest areas prescribed in accordance with the advice of the various Government Departments.

During the period under review, the Forest Service which was organised the previous year was operating at full strength with satisfactory results. A full report is given in Appendix I.

A supplementary interim scheme for the "Control of Forest Squatters and shifting cultivation in the Forest" was approved in the early part of the year; in addition, the Commissioner of Lands, Jamaica, at the invitation of the Local Government, prepared a report on the "Squatter Problem and Land Use in Dominica." At the close of the year this report had not yet received the consideration of Government. It is obvious at this stage, however, that the interim scheme is unable to deal with the present situation which will become progressively more serious, and a far more comprehensive scheme will be required. If this Land Use problem is not solved, serious repercussions both economic and political must inevitably follow.

(ii) To encourage the proper use of land by the adoption and practice of systems of agriculture which will conserve the soil and improve its fertility by

(a) advising as to the allocation of production in accordance with the findings of a soil survey ;

(b) the investigation and demonstration of suitable systems of agriculture in the varying ecological systems of the Island.

(a) Nothing further can be recorded. Work has not yet been started in the Windward Islands.

(b) Preliminary work was continued on the Agricultural stations.

II. *Security of Land Tenure.*

(i) To provide the means of regularising systems of land tenure for the protection of both the landlord and the tenant, and the conservation of the soil by the enactment of appropriate legislation.

It has not yet been possible to take any action in this connection.

III. *The maintenance and wherever economically practicable the expansion and improvement of crop production for export to the world's markets.*

(i) To render advice, guidance, and such other forms of assistance as may be practicable in the production of staple commodities for export to the world's markets by:

(a) scientific investigations ;

(b) distribution (within practical limits) of selected plant material ;

(c) the demonstration of suitable cropping methods ;

(d) the provision of technical advice in methods of processing ;

(e) the operation of a marketing organisation when this is necessary in the general interests of the community.

Investigational work in the course of the year included manurial trials on bananas and tomatoes and a Vanilla experiment on root disease control.

Selected plant material in the form of budded limes, oranges, grapefruit, miscellaneous citrus, mangoes, avocado pears and other economic plants were distributed from the Botanic Gardens, and Agricultural Stations. Work on (c) is being carried out at the Agricultural Stations and advice on methods of processing products is given through the extension service.

The Government Marketing Depot was in operation during the year.

IV. *The improvement of small scale (or peasant) Agriculture.*

(i) To encourage the abandonment of the undesirable and wasteful systems of shifting cultivation commonly practiced by small cultivators.

(ii) To encourage and to assist small cultivators to establish and maintain themselves under a permanent system of agriculture by :

(a) the demonstration of permanent systems of small scale agriculture ;

(b) facilitating whenever possible the provision of land to small cultivators for the practice of approved systems of agriculture ;

(c) affording assistance wherever possible in the construction of houses and roads and the provision of water supply and other social amenities.

All these objectives depend upon the execution of a Land utilization plan and some form of land settlement scheme. This problem really forms part of the larger issue of Squatter Control and Land Use and a satisfactory answer will only be found when steps are taken to deal effectively with the Land Use problem. It has not yet been considered by the Legislature.

V. *Stability of farming and improvement of food supply.*

(i) To encourage the practice of more stable systems of agriculture by the operation of Agricultural Stations in various parts of the island for the purpose of investigating and demonstrating methods of diversification, systems of crop rotation in short term cropping, mixed farming, the care and management of livestock, the preparation of pen manure and the use of chemical manures and the preparation and grading of produce for market.

The five agricultural stations operated during the year.

(ii) To urge the increased home production of the basic food requirements of the people by :

(a) the distribution of suitable varieties of the more important food crops;

(b) the demonstration of methods of producing food crops suitable for the preparation of a balanced diet ;

(c) encouraging the rearing of livestock and the greater consumption of animal products ;

(d) the demonstration of clean milk production;

(e) assisting in the organisation of marketing and storage of food crops;

(f) the introduction of protective tariffs for selected food crops or animal products whenever such action would be in the general interest of the community.

Planting material of food crops including European vegetables were available at Agricultural Stations. Stud animals were also maintained to improve and increase the local livestock. It has not yet been possible to implement (d) and (e) and there is no necessity for (f).

Fish farming trials are being undertaken & Tilapia Mosambica has been introduced to the island.

VI. Efficiency in the operations of production, processing and distribution of agricultural products.

(1) to encourage the practice of efficient methods of production, processing and distribution of agricultural products by:

(a) the teaching of crop and animal husbandry in the schools;

(b) the provision of facilities for training agricultural instructors, overseers and a nucleus of small farmers;

(c) the demonstration of approved methods of agricultural production and livestock management;

(d) the provision of facilities for obtaining agricultural credit;

(e) the provision of technical advice in methods of processing;

(f) the encouragement of the formation and operation of co-operative organisations of producers;

(g) the adoption of measures to reduce the common practice of praedial larceny and ultimately to eradicate the evil.

No action has been possible with regard to (a), (d), (e), and (g).

Under the guidance and encouragement of the Social Welfare Officer two successful producers organisations have been formed in the past three years and now seem to be firmly established. Both organisations deal with Limes and manufacture Lime Juice.

Attention has been directed for the past three years to the vital importance of providing some form of training for entrants to the Junior Ranks of the Department and for intending Estate overseers, and small land owners. Proposals have been put forward for the establishment of a Farm Institute for the Eastern Caribbean to be located in Trinidad. The functions of this institute would be to provide training for Junior personnel of Departments of Agriculture in the area.

The necessity of making provision for Training facilities was recorded at the first Conference of Agricultural Superintendents held at Grenada in 1946. Every year since then, in the annual report attention has been directed to the urgency and importance of the matter, and the stage has now been reached when the lack of trained personnel is affecting adversely the work of the Department.

PART I.

AGRICULTURE IN THE COLONY

WEATHER CONDITIONS.

The meteorological data for the year are summarised in Appendix V and observations on the data are recorded below.

(a) Rainful Returns for 21 recording stations and monthly rainfall for the Botanic Gardens from 1931 — 1950 are shown in Appendix IV.

At the Botanic Gardens, total rainfall for the year amounted to 90.95 inches as compared with 79.95 inches for the previous year and a twenty year average of 79.34 inches.

Above average falls were recorded for January, February, March, May, June and October and below average falls for April, July, August, September, November and December.

It is of interest to note that a fall of 10.37 inches for May was the heaviest in at least 20 years and falls for January and October were the heaviest recorded in the last decade. December proved to be unusually dry and in its 3.62 inches of rainfall was the lowest since 1939.

The following Meteorological instruments were received at the end of the year: Rain Guages, Cup Anemometers, Bimetallic Thermographs and Recording Barometers.

PRODUCTION & EXPORTS

Exports Statistics for the past two years are shown in the following table:—

AGRICULTURAL EXPORTS — DOMINICA 1949 — 1950

		1949		1950	
		Quantity	F.O.B. Value	Quantity	F.O.B. Value
Lime Products :			$		$
Concentrated Juice	gals.	46	40.00	—	—
Raw juice	gals.	385,952	235,757.00	506,795	349,489.00
Lime Juice Cordial	gals.	66,149	43,598.00	—	—
Distilled Oil	lbs.	18,005	94,913.00	19,870	156,091.00
Ecuelled Oil	lbs	554	4,838.00	1,130	8,165.00
Oils in Solution	lbs.	8,631	—	14,102	—
Green Limes	brls	3,341	17,402.00	2,735	35,830.00
Pickled Lime	brls.	73	1,123.00	—	1,092.00
			397,671.00		550,667.00
Other Fruits and Allied Products :					
Lemons	C/crates	—	—	1,101	2,956.00
Oranges	C/crates.	16,238	52,494.00	12,666	76,923.00
Orange Oil	lbs	761	1,812.00	940	2,820.00
Grapefruit	C/crates.	17,185	38,275.00	25,547	100,364.00
Grapefruit Juice	gals.	184,147	25,421.00	8,284	6,560.00
Grapefruit Oil	lbs	563	1,829.00	41	168.00
Bananas	bunches	120,676	141,474.00	349,675	557,999.00
Mangoes	C/crates	11,608	27,211.00	7,866	35,024.00
Avocado Pears	T/crates	19,873	18,983.00	12,752	30,929.00
Miscellaneous	val	—	88,205.00	—	40,632.0
			395,704.00		854,375.00
Cocoa Products :					
Cocoa, Raw	lbs	330,204	86,596.00	261,279	109,805.00
Cocoa, Prepared	lbs	59	14.00	—	—
			86,610.00		109,805.00
Coconut Products :					
Copra	lbs	1,183,426	111,391.00	1,578,305	146,710.00
Coconuts,	No	185,301	6,807.00	141,109	5,080.00
			118,198.00		151,790.00
Sugar Products :					
Rum	gals.	6,815	7,474.00	2,583	3,677.00
Bay Products :					
Bay Oil,	lbs	36 583	33,051.00	15,838	29,505.00
Bay Rum	gals	58	85.00	80	180.00

General Observations. In last year's report, reference was made to anticipated increases in production in the course of the next ten years due mainly to the activities of new investors and planning of an extensive new road programme. As was to be expected, the fifteen year contract of the Banana Association with Antilles Products Limited has boosted production and the value was higher than for any other single product exported. The Fruit processing factory was completed during the year and is being operated by a locally registered company under the name of Caribbee Products Limited. The Colonial Development Corporation purchased Melville Hall Estate, 900 acres in the Northern District from Government, and also purchased Castle Bruce Estate, 1400 acres, on the Windward Coast. This latter estate has been completely abandoned for many years, so that the proposed development will bring additional land into production, and provide employment for the residents of the area. Operations were commenced on both estates.

The monetary value of exports for the year excluding re-exports totalled $2,064,970.00 an increase of 59% on last year's figures and the highest recorded in the history of the Island. Increases in total value exported were recorded for bananas, lime and lime products, coconuts, cocoa and vanillas. On the other hand, it must also be recorded that the cost of production of all commodities has increased considerably with higher costs of equipment and labour. Labour rates were increased 33% during the year and are now 171% above 1939 rates.

Cost of living index is 287% the highest ever recorded and which represents 187% increase over 1939.

Observations relating to the following industries are recorded below:—

Limes. Production of limes over the past six years calculated as barrels of fruit is set out in the following Table:—

Product.	*Barrels of Fruit.*					
	1945	*1946*	*1947*	*1948*	*1949*	*1950*
Distilled Lime Oil ..	47,994	74,970	76,140	64,901	48,871	59,755
Ecuelled Lime Oil ..	29,976	23,552	12,024	9,357	5,263	10,735
Oils in Solution ..	5,273	682	14,511	40,456	23,427	47,006
Green Limes ..	727	1,771	1,765	3,207	3,343	2,735
Pickled Limes ..	—	—	—	—	73	—
	83,970	100,975	104,440	117,921	80,977	120,231

The figures for any one year do not necessarily represent annual production as there may be a carry over of products at the end of a calendar year. It is estimated that the annual production is now not less than 110,000 barrels.

Countries of Destination. The destination of Lime products is set out in the following table:—

Product		*Country of Destination*					
		United Kingdom	Canada	British Pos'sions	United States	Foreign C/tries	TOTAL
Concentrated Lime Juice	gals	—	—	—	—	—	—
Raw Juice	gals.	443,437	16,713	37,730	8,617	—	506,497
Distilled Oil	lbs.	6,875	105	8,826	4,064	—	19,870
Ecuelled Oil	lbs.	1,123	—	7	—	—	1,130
Oil in solution	lbs.	13,969	51	80	2	—	14,102
Green Limes	brls.	62	1,343	1,330	—	—	2,735

Citrus Fruit. Exports of Citrus Fruits totalled 25,547 crates of grapefruit, 12,666 crates of oranges and 1,101 crates of lemons. It should be emphasised that export figures are well below present production which is estimated to be not less than 200,000 crates. It is hoped that the newly constructed Fruit Processing Factory will absorb a fair proportion of the crop. The bulk of this year's exports was destined to the United Kingdom, which is by no means a regular outlet for Dominica Fruit principally due to lack of suitable shipping facilities and a fluctuating price. Export during this year to the United Kingdom was organised by a private individual who purchased locally from producers at an agreed price ranging between $1.84 to $2.00 per crate, and made his own arrangements for shipping, a commendable effort which unfortunately did not result in a financial success for the shipper.

Vanillas. Cured beans exported during the year amounted to 34,781 lbs. valued at $184,860.00 as compared with 68,823 lbs. valued at $153,987.00 for the preceding year. Although 49% less beans were exported this year, there was an increase of 24% on the amount realised for last years exports, thus indicating a fairly substantial increase in prices. Cured beans exported were destined to the U.S.A. and Canadian markets and were of uniformly good quality.

Coconut Products. The 1,518,305 lbs of copra exported showed an increase of 234,879 lbs. over last year's figures and there was a marked interest shown in the copra industry. All copra was destined for Barbados under the Fats & Oils Agreement of 1947 and the price received for copra during the year was $216.00 per ton.

Cocoa. Like vanillas, less cocoa was exported and more money realized due to the attractive price offered. 261,279 lbs. of beans fetched $109,805.00 as compared with 330,204 lbs. realising $86,610.00 for the previous year.

Bananas. The island's production of bananas has increased considerably as a result of the fifteen year contract with Messrs. Antilles Products Limited. Bunches exported totalled 349,675 valued at $557,999.00 as compared to 120,676 bunches valued at $141,474.00 for the previous year.

Rum. The eight distilleries in operation during the year produced a total of 72,735 gallons.

The following table sets out the production for the past six years.

1945	91,898 gals.	1948	135,000 gals
1946	98,668 „	1949	115,918 „
1947	97,706 „	1950	72,735 „

The Leeward Islands were the main importers of the island's rum having taken all but two gallons of the 2,583 gals. exported for the year.

PESTS & DISEASES

Citrus Crops. The incidence of withertip of limes (Gloesporium limeticolum) was not above average. Citrus weevil (Diaprepes Spp.) caused losses of young plants in nurseries especially at the Botanic Gardens and Goodwill Estate. No serious damage was done to established orchards.

Fruit piercing moths were active in orange groves in November and December and were the cause of losses to growers. It was hoped to have had the services of an expert to study the problem during the year, but the visit had to be postponed till next year.

Sigatoka Diseases of Bananas (Cercospora Musae)—As was predicted in last year's report the incidence of this disease has increased with the spread of the industry and the absence of control measures. On the invitation of the Banana Association, the Chief Executive Officer of the Banana Leaf Spot Control Committee of Jamaica visited the island from 1st to 13th July and made the following observations:

(i) Cercospora Leaf Spot was island wide in varying degrees of intensity.

(ii) In most areas there were localised patches of heavy infection.

(iii) Ascospore infection was most likely present and this should be borne in mind when studying control measures.

As to recommendations the reporting officer states:

"I cannot emphasize too strongly the necessity for the immediate and widespread spraying of bananas in the island. The infection on the whole is mild and is not yet affecting the fruit. Unless extensive control measures are instituted at once, this infection will very soon reach the stage where fruit will be affected and control difficult. Dominica is in the ideal position of having a long term contract for the sale of her bananas and in having only a mild infection of Leaf Spot. If an island-wide spraying campaign is started at once she can look forward to an ever-increasing production but without effective spraying the banana industry will slowly but surely decline as it has done in other parts of the world where spraying measures were not adopted or adopted too late".

Panama Disease. (Fusarium Cubense) was prevalent on the Gros Michel, but there are now only a few stands of this variety which has been replaced by Lacatan as the chief commercial variety.

Vanilla. *Root Rot (Fusarium Batatis var. Vaniallae)* The incidence of this disease was not above average and the intensity of cropping was about the same as last year. Past experience has indicated that excessive cropping of vines in times of high prices invariably results in a high incidence of the disease.

Cocoa. Black Pod (Phytophthora palmivora) was the most serious disease affecting this crop.

Vegetables. Tomatoes and Egg Plants. Wilt disease caused severe losses to these crops at the Botanic Gardens and Agricultural Stations. Mention should be made of one variety of Egg Plant i.e. Rosita and three varieties of Canary Island tomatoes which continue to be very resistant and should be more widely used.

Beets. At the Gardens the Larvae of Zinckenia Fascialis caused some damage, but was controlled by the use of D.D.T. Spray.

PART II

WORK OF THE DEPARTMENT

ADMINISTRATION

The administration of the Department was for the fourth year in succession hampered by staffing difficulties. The post of Agricultural Assistant, vacant since 1947, remained unfilled, and the Senior Agricultural Instructor again carried out the work of the Agricultural Assistant and duties of Produce Inspector. The sale of Melville Hall Estate relieved the Department of its responsibility for the management of this property and enabled the Agricultural Assistant, Northern District, to devote his full time to his normal duties. The Forestery Service was fully staffed during the year and was effectively administered by the Assistant Conservator of Forests.

BOTANIC GARDENS AND PUBLIC GROUNDS

Botanic Gardens. Ornamental Section

This section was maintained at its usual high standard of attractiveness. The water lilies introduced late in 1949 bloomed profusely and have been a great success. Several beds of flowering annuals were cultivated, which added a touch of colour to the green lawns. The grounds of the new office building were landscaped.

Public Grounds.

The grounds of the Memorial Park, Military Cemetery, Morne Bruce, Government Office and Public Library were maintained in an attractive condition throughout the year. One of the three Cassias planted at the Memorial Park last year succumbed and had to be replaced. These, and the Royal Palms recently planted at the Military Cemetery, are showing satisfactory progress.

CROP OBSERVATION AND MULTIPLICATION PLOTS AT BOTANIC GARDENS AND AGRICULTURAL STATIONS

The Botanic Gardens and Agricultural Stations continue to be the chief source of supply of planting material and the best crop varieties are maintained for distribution.

(i) **Yams.**—The Barbados Lisbon has proved to be an extremely heavy bearer as revealed at the Londonderry Agricultural Station where twenty tons per acre were obtained. Other varieties maintained for distribution include, Rough and Smooth Statia, Bottle Neck Lisbon, Oriental, Specia Red Lisbon, Moon, Moonshine, Lisbon 638 and Silk.

(ii) **Grasses.**—The following fodder grasses were cultivated both for use on the Agricultural Stations and for supplying planting material:

Station	*Type of Grass*
Botanic Gardens	Elephant Grass *(Pennisetum purpureum)*
	Guatemala Grass *(Tripsacum laxum)*
	Colonial Grass *(Panicum spectabile)*
La Plaine	Sour Grass (*Andropogon pertusus)*
	Colonial Grass *(Panicum spectabile)*
Londonderry	Elephant Grass *(Pennisetum purpureum)*
	Guatemala Grass *(Tripsacum laxum)*
Portsmouth	Elephant Grass *(Pennisetum purpureum)*
Colihaut	Elephant Grass *(Pennisetum purpureum)*
	Sour Grass *(Andropagon pertusus)*

Cocoa.—During the year two hundred and thirty cuttings comprising seven clones were planted out at the Grandbay Agricultural Station. Grubs were responsible for the death of a few plants but the rest of the plants made excellent growth.

At the Londonderry Station, eighty-eight cuttings were added to the fields established in 1946 and 1947. The cuttings planted in those two years have made exceptionally good growth, and are bearing heavy crops.

Candle Nut – Aleurites Triloba.—A small observation plot was established at the Grandbay Agricultural Station. The Candle Nut is a native of the Moluccas where the dried kernels of the fruits are stuck on reeds and used as substitutes for candles. The seeds yield a valuable oil which is used in the manufacture of varnishes, lacquers, soap, and for lighting purposes.

European Vegetables.—Both seeds and seedlings were available at the Botanic Gardens and at Agricultural Stations. There was a great demand for seeds of Carrots, Cabbages, Cucumbers, Beans, Tomatoes and Pumpkins.

Small demonstration plots of vegetables were laid down at all Agricultural Stations during the year. These were meant to encourage the peasants in vegetable gardening and at the same time the lay-out was such as to demonstrate a system of rotation, rotating legumes with roots and leafy vegetables.

Sorghums.— Four varieties of sorghums were introduced and were planted at the various Agricultural Stations with a view of providing grains for chickens and fodder for animals. The plants thrived satisfactorily, but unfortunately, birds destroyed all the grains which could not be protected by bagging and it would appear that even large acreages could be severely damaged by depredations from this pest.

Tomatoes.— The Ponderosa, Marglobe and Sorpressa varieties were grown at the Botanic Gardens and at all Agricultural Stations. The Sorpressa is to be recommended for its hardiness and heavy bearing and its resistance to wilt disease. The medium size fruits are of good quality and are easily disposed of on the local market.

Dwarf Coconuts.—A total of 219 nuts to provide planting material was distributed during the year. These were collected from the plots at Grandbay, Portsmouth and Londonderry where all palms have come into bearing. The palms have all taken on heavy buds, but it is very difficult to keep accurate records due to the ease with which nuts can be stolen.

Maize.—Maize was grown at all Agricultural Stations in a rotational strip cropping demonstration and as a means of providing poultry and livestock feed. Damages from Corn Leaf and Ear Worms in the early stages of growth and from rats at time of maturity, reduced the yield considerably. However, yields of 3,650 lbs. per acre were recorded at the Portsmouth Agricultural Station.

Bananas.—The plots established last year at the Agricultural Stations came into bearing and 55,400 lbs. of fruits were sold; in addition 1,309 suckers were made available to peasants and estate owners. Spraying with Bordeaux Mixture for the control of Cercospora Musae was done at regular intervals.

Citrus.—The mixed citrus varieties at Grandbay and Londonderry Stations, were maintained during the year. More trials with various root stocks will be made in the coming year. Lack of marketing facilities accounted for all or nearly all the fruits at the Londonderry Station going to waste

LIME EXPERIMENT STATION

Limes.—Unfavourable weather conditions affected the crop which amounted to only 500 barrels as compared with 740 barrels for the previous year. Sale was by quarterly tender and for purpose of comparison previous years' prices are quoted.

	1948	*1949*	*1950*
1st. Quarter	$2.08	$2.34	$2.64
2nd. Quarter	2.08	2.52	3.60
3rd. Quarter	2.08	2.64	3.60
4th. Quarter	2.08	2.64	3.60

The young limes budded on Seville and Citrus mitis established last year have made satisfactory growth.

New Citrus Varieties.—These plots established in 1948 — 1949 made satisfactory progress during the year and the collection now comprises Glen Improved. Polk Summer, Armstrong Seedless, Clementine, Florida, Orlando, Minela, and Sampson Tangelo, Ruby Grapefruit, Cleopatra Mandarin and Glen Red Grapefruit.

Cashew Nut Plot.—This plot is now fully established, and has demonstrated that this crop can be successfully established and give economic returns on this soil of low fertility.

PLANT DISTRIBUTION

Plant nurseries were maintained at the following places during the year: Botanic Gardens, Goodwill Estate, District Agricultural Stations, Vieille Case and Coulibistrie. Plants distributed during the year are detailed below :

Budded or Grafted Plants.

Washington Navel Orange	1,495	
Valencia	5,218	
Other Oranges	444	
Grapefruit	3,861	
West Indian Limes	6,887	
Other citrus	310	
Avocado Pears	97	
Mangoes	150	
Total ..	18,462	

Other Economic Plants.

Citron	399	
Dwarf Coconuts	219	
Nutmeg Seedlings	1,240	
Fodder Grass	19,150	slips
Yams	2,769	lbs.
Citrus Stocks	11,100	
Cocoa Seedlings	498	
Cocoa Cuttings	4,574	
Coffee Seedlings	4,800	
Sugar Cane Cuttings	2,800	
Tannia Plants	2,638	
Tephrosia Seeds	17	lbs.
Horse Beans	37	Pots
Vegetable Seedlings	1,213	
Vegetable Seeds	2,654	Pkts.
Banana Suckers	1,309	
Potato Cuttings	1,500	

In addition aid was given to owners of private nurseries by the loan of propagators from the Department.

PLANT INTRODUCTION.

Seeds and Plant Material introduced during the year comprised the following :—

Jerusalem Artichoke	3	doz. Rhizomes	Grenada
Sorghum Var. Hegare	1	Pkt.	I.C.T.A.
Sorghum Var. Scharock Kafir	1	Pkt.	I.C.T.A.
Sorghum Var. Red Hull Sumac	1	Pkt.	I.C.T.A.
Sorghum Saccharatum Imphee	1	Pkt.	I.C.T.A.
Venezulan String Beans Dwarf Black 4 samples Nos. 18, 42, 61, 168	4	Pkts.	I.C.T.A.
Venezuelan String Beans No. 42 — Climbing Black	1	Pkt.	I.C.T.A.
Tomato — Pearl Harbour	1	Pkt. 2 ozs.	Dept. of Agric. Jamaica.

Echinocactus ingens Tuc.	1 Pkt.	Prof. Juan Balme Mexico.
Bergamot Orange Seeds	1 Pkt.	J. D. Archbold.
Onion Seeds — Excel Bermuda	¼ lb.	Dept. of Agric. Bermuda.
Phaseolus Trinervius	1 Pkt.	I.C.T.A.
Calapogonium Mucoinoides	1 Pkt.	I.C.T.A.
Phaseolus Aureus	1 Pkt.	I.C.T.A.
Eleusine Coracana	1 Pkt.	I.C.T.A.
Crotalaria Juncea	1 Pkt.	I.C.T.A.
Sugar Cane B. 4362	3 cuttings	Dept. of Agric. Barbados.
Palm undetermined F.T.G. No. 402	30 Seeds	Mrs Anne Archbold, Nassau.
Pink Lotus Lily Seeds	1 Pkt.	Dept. of Agric. Br. Guiana.
Victoria Regia Lily Seeds	1 Pkt.	Dept. of Agric. Br. Guiana.
Vigna Sesquipidalis	1 Pkt.	Dept. of Agric. Br. Guiana.
Bergamot Orange Seed	1 Pkt.	K. B. Tzannides.
Pomelo Seeds	1 Pkt.	K. B. Tzannides.

Cocoa	I.C.S. 1	68	Buds	Department of Agriculture, St. Vincent.
	I.C.S. 39	182	„	„
	I.C.S. 46	213	„	„
	I.C.S. 98	122	„	„
	I.C.S. 16	37	„	„
	I.C.S. 40	108	„	„
	I.C.S. 80	42	„	„
	I.C.S. 70	30	„	„
	I.C.S. 48	70	„	„

COCOA PROPAGATION STATION

Since work first started in 1948 very satisfactory progress has been made in establishing this station. During the year under review, construction work consisted of the erection of an office and tool shed, compost shed, propagating bins, plant delivery shed and extension to the budding shed.

The nursery established in the previous year was extended and now contains 1281 clones comprising Imperial College Selections (I.C.S.) Grenada Selections (G.S.) and Dominica Selections (D.S.) A second nursery is being established and now has 751 cuttings and buddings of I.C.S. and D.S. clones.

In anticipation of the heavy demands that may be imposed upon the Department for cuttings, two additional nurseries of a total area of an acre were opened up, the necessary nurse plants were established and all preparatory cultivations were completed. This nursery will be capable of accommodating 1700 plants and will be planted up in the coming year.

Production of cuttings and buddings for the year totalled 6,666 of which 453 were I.C.S. buddings the remainder consisting of 4284 cuttings of D.S., 1471 cuttings of I.C.S. and 458 cuttings of C.S. Budwood was obtained from St. Vincent and from plants in the Botanic Gardens nursery.

Clones represented in the Nurseries at the Botanic Gardens and Cocoa Propagation Station now total 31 and comprise the following:

Imperial College Selections (I.C.S.) 1,6,8,16,39,40,45,46.48.60.70,80,84.95, and 98.

Grenada Selections (G.S.) 5,14,29,33,65, and 70.

Dominica Selections (D.S.) 1,2,3,4,5,6,7,8,9, and 10.

Selection work was continued during the year and of seventy-five trees which were under observation, fifteen have been retained for further study.

Pre-planting inspection of all areas was carried out, and before plants were issued the following requirements had to be met:—

(a) Adequate wind protection;

(b) Ground Shade in the form of Bananas, Tannias and Pigeon Peas or other satisfactory substitutes;

(c) The necessary Soil Conservation measures which the topography of the land requires.

The number of cuttings distributed to growers totalled 4574.

LIVESTOCK

Stud Animals. In order to augment the number of stud animals in the island and to further increase the utility of the local animals a three-quarter bred Kentucky Jack, three Black Belly Ram Sheep and a grade Holstein Bull were introduced in the course of the year.

In addition to the above, three graded Holstein Heifers and a Holstein Guernsey cow were introduced for the purpose of forming small dairy units at the two major agricultural stations.

The Pigs introduced from Trinidad in 1948 have been extremely successful and several litters have been obtained from them. There is always a great demand for these and 27 piglets were sold to interested parties. Young boars were retained and distributed to agricultural stations.

The following table sets out the number of stud animals and the areas in which they were stationed during the year :

Location of Stud Centre	*Type of Animal*			
	Bull	*Sheep*	*Stallion*	*Pig*
Roseau Botanic Gardens	1	1	1	2
Londonderry Agric. Station	2	1	—	—
La Plaine Agric. Station	1	1	—	—
Colihaut Agric. Station	—	—	—	—
Grandbay Agric. Station	1	1	—	—
Portsmouth Agric. Station	1	—	—	1
TOTALS	6	4	1	3

The table below sets out the number of services for the past five years :

Animal	*Numbers of Services and Years*					***Total*** **5 Years**
	1946	*1947*	*1948*	*1949*	*1950*	
Bull	478	330	183	107	109	1,207
Sheep	79	81	146	5	16	327
Horse	22	27	6	21	5	81
Pig	36	70	36	13	19	174

Ducks.— Three trios of Khaki Campbell Ducks were obtained from Trinidad and these were housed at the Grand Bay and Londonderry Stations. These ducks are noted for their laying ability and many persons have already shown interest in them.

Poultry.— Some new blood was introduced at the beginning of the year when 24 hens and 5 cocks of Rhode Island Reds arrived in the island. These were distributed to Agricultural Stations.

Distribution of eggs during the past 5 years is a follows :

Year	1946	1947	1948	1949	1950	Total
Eggs Distributed ..	1836	885	1062	989	1210	5,982

EXTENSION SERVICES

The staffing difficulties referred to elsewhere reflected on the efficiency of this service, the success of which depends on adequate supervision. These services consist of :

A. Advisory.

(a) Advice on agricultural problems to growers and other interested persons through personal visits and other appropriate measures.

(b) Soil Conservation propaganda.

(c) Preplanting inspection for citrus and cocoa, and 'follow up' visits to ensure that sound cultural practises were being followed.

(d) Inspection of Crown Lands for sale for agricultural purposes.

(e) Crop valuations.

Special attention was directed to soil conservation, and aid given to growers in the layout of contour drains, planting of grass strips and making of stone terraces. Since active propaganda started in 1943 with the inauguration of the Field Services real progress can be claimed in this direction. Conservation practices have been increasingly adopted by growers and an appreciable acreage has been protected from erosion. It was not possible to attend to all the applications for inspection of Crown Lands as the demand for land has increased with the demand for bananas. It has become evident that this problem of land inspection will have to receive special consideration.

B. Agricultural Stations.

These Stations are now classified into :—

(a) Major stations at Londonderry and Grand Bay.

(b) Secondary stations at Portsmouth, Colihaut and La Plaine.

Limited development work was undertaken and accomplished during the year which consisted of construction of Foremen's Quarters and Livestock Units, making of roadways and establishing additional windbreaks on the major stations. On the secondary stations, additions were made to certain of the buildings, roadways were extended and additional windbreaks planted.

The work carried out on the Stations consisted of the following: —

1. **Plant Nurseries.**—Plant material in the form of budded and grafted plants, ground provisions, fodder grasses and seed of European Vegetables were available at Agricultural Stations. (For details see Plant Distribution).

2. **Livestock Improvement.**— In addition to Stud Centres, Livestock Units were established at the major stations. These units consist of four (4) cows

housed in a simple stable made of round wood, and thatch, which could easily be constructed by any peasant. The object of these units is to work out and demonstrate animal management including the manufacture of pen manure. (For details of services recorded see Livestock Section).

3. **Observation Plots.—** Relative information is supplied under section dealing with observation plots.

(4) Investigational work was confined to experiments on bananas.

CONSERVATION OF NATURAL RESOURCES

Though the rainfall for the year was above average, there were no periods of falls sufficiently heavy to cause serious flooding. Reference is made in the appropriate sections of this report to the work of the Forest Service in implementing the Forest, Soil and Water Conservation Ordinance, and to the progress made in the spread and application of conservation measures.

PRODUCE INSPECTION

The inspection service functioned satisfactorily during the period under review and the following sets out the quantity of vanilla beans inspected at various buying sations:—

Stations	*Green Beans*	*Rejects*	*Cured Beans*	*Rejects*
Roseau	42,140	2,098	7,562	66
Mahaut	16,814	1,034	25	6
St. Joseph	31,954	516	261	10
Coulibistrie	17,158¼	111¾	16	1
Colihaut	17,531	1,274	39	5
Portsmouth	9,144½	140	188	10
Marigot	250¾	10	27	2½
Vieille Case	—	—	—	—
Castle Bruce	895	14	137	3
Rosalie	5,994	40	182	5
La Plaine	90½	3	68	2
Delices	903½	15½	33	1
Grand Bay	1,891¼	41½	186	4
TOTAL	144,756¾	4,357	8,724	115½

In addition to the above, 34,781 lbs. of cured beans were examined prior to export and a uniformly high standard was maintained.

The amount of green beans recorded at all stations exceeded by 68% that of last year.

AGRICULTURAL EDUCATION

During the course of the year, thirty pupils were on roll. Of this number, five were dismissed for unsatisfactory conduct, six were given satisfactory leaving certificates to take up work out of the Department, and five were absorbed in the Department. The remaining fourteen were divided up among the Botanic Gardens and Agricultural Stations.

Distribution of Pupils at the end of the year was as follows :—

Botanic Gardens	8
Londonderry Agricultural Station	2
Colihaut	1
Portsmouth	1
La Plaine	1
Grand Bay	1

(b) The following periodicals were received and circulated amongst the staff.
The Smallholder and Home Gardening.
The Journal of the Jamaica Agricultural Society.
Proceedings of the Agricultural Society of Trinidad and Tobago.
The Negro Farmer.
The American Small Stock Farmer.

APPENDIX I.

ADMINISTRATION REPORT DOMINICA FOREST SERVICE, 1950

Forest Policy.

Dr. Beard's proposals for Forest Policy Bulletin No. 11 Development and Welfare were adopted in principle on publication of his report and are summarised as a reminder :—

(a) The execution, together with other Departments, of a Land Use survey of Dominica to provide the necessary data for land planning.

(b) On completion of (a) to draw up a complete land allocation and conservation policy for Dominica.

(c) To carry out Forest Reservation and to manage these Reserves in such a manner as to fulfil their protective function in the interests of soil and water conservation, and at the same time to provide the maximum outturn of forest produce on the basis of a sustained yield.

(d) To carry out research in sylviculture and utilzation of forest products.

(e) To educate and train subordinate staff and the public to the benefit of a properly implemented Forest Policy and to the efficient use of Forest Products.

(f) To encourage private forestry and to assist in establishing conservative management.

(g) To protect nature.

The above summary shows the Forest Policy to be a long term aim. During the past year there has been a greater awareness of the necessity for more conservative management both in the Crown and Estate lands. Nevertheless, there are those hampering the work who should know better. .

THE FOREST ESTATE.

(1) *Crown Lands.* More is becoming known about the extent of Crown Lands and the state of the Forest thereon. Both by patrol, and, to a lesser degree, examination of those Air Photographs which emerged from the first flights, it is clear that Forest destruction by shifting cultivation has been extremely serious. The necessity for Reservation is pressing and continual vigilance will be needed to maintain unspoilt Forest within the proposed Reservations. Apart from the main Forest blocks which will protect the headwaters of the majority of streams, clearing has been widespread in lower Crown Land reaches. It is in these areas that squatting has been most serious.

(2) PRIVATE LANDS. Here the picture is not so hopeful. Sales of Forest Produce from the majority of private lands have been extensive. The majority of private landowners still appear to consider their Forest Land, irrespective of slope, as a site for settlement of labour or as an area to be held against all comers until the day when a road may come near enough to enable them to sell their trees for timber, charcoal or cordwood. This attitude is regrettable in that with a little thought, income, settlement and preservation could be reconciled with a lasting benefit to themselves as well as to the island as a whole. There is a minority which is trying to maintain the forest in good order. What is needed is a majority. The lower catch-

ments of every stream in the country lie in private hands and preservation of Forest, even if only along the water courses themselves, would be of untold value.

Communications. Certain roads have been constructed but none into Crown Lands.

Legislation. Apart from one amendment to the Forest Soil and Water Conservation Ordinance, empowering Forest Officers to demand the production of plans of estates co-existent with Crown Lands, there has been no legislation of note.

Education. Further circulars were published in the press and sent to education authorities. Lectures were delivered in a number of Villages and routine propaganda by field staff continued.

Staff. Staff strength remained at 1 Forest Supervisor, 4 Rangers and 9 Guards, one of whom is employed by C.D.C. on the Roseau River Catchment Reserve. No vacancies exist. One Forest Ranger resigned being replaced by promotion of a Forest Guard.

Office staff consisted of one Second Division Clerk and Temporary Clerical Assistant.

Forest Reservation. The proposed Roseau River Catchment Reserve perimeter survey was completed. Declaration is delayed due to the plans of two small properties, part of which come within the Reserve, being untraceable at the Registry. Resurvey of the latter will have to take place.

The proposed Transinsular Road Forest Reserve, being part of the proposed Central Forest Reserve, and embracing some 8 square miles is proceeding. This Reservation should cover the Forest to each side of the proposed Transinsular Road within Crown Lands and will be developed for production as soon as the road goes through.

Reconnaissance for the Central Forest Reserve proper continued.

Forest Protection. Shifting cultivation within Crown Lands has been kept in check by energetic patrol on the part of Staff. The demand for more land is increasing and the present static position cannot be maintained without further measures.

On private lands, those estate owners who show interest have begun a permit system of their own which is having some effect and reducing theft. In principle, control is exercised by Forest Staff refusing to give Removal Permits for Forest Produce, to private individuals working within the estates in question unless they possess a permit to cut, signed by the landowner or his representative. Insufficient landowners have availed themselves of this offer of indirect control within their lands.

Squatting on private lands remains serious, especially in those estates where the landlord is absent for the majority of the time. Hundreds of acres of good forest are being cut annually. With the present staff, no aid to owners by way of managing private forest on their behalf is possible.

Apart from man and a few of his domestic animals there are no pests causing serious damage.

FOREST OFFENCES.

Cases taken against Individuals	*Total Compensation* $	*No. of Cases*
Cases Compounded	119.49	46
Court Cases — Fines	52.00	21
Court Cases — Imprisonment ..	—	1
Not Proven or Dismissed	—	3
Warned by A.C.F.	—	23
Undetected	—	4
Outstanding on 31.12.50	—	14
TOTAL	171.49	112

UTILIZATION.

Pitsawn and Hewnwood

outturn can be given for private with the seasons. No reliable figure for Pitsawn outturn, as usual, varied lands in the year under review. Crown Lands sales are shown below. Prices rose steadily from April, until, by December, an average roadside price for general construction timber of some 13¢ board foot ruled. The reintroduction of a price control, considered essential due to a rising demand by certain development projects, was unfortunately delayed by the absence of the Assistant Conservator of Forests on leave.

Charcoal

Charcoal. As with pitsawing, seasonal output varied. Sales from Crown Lands are shown below. Prices rose alarmingly but no effective price control could be devised.

CROWN LANDS PRODUCE WORKED.

Number of trees sold	62
Charcoal	
Cords Burnt	3
Cordwood	
Cords	10

Sawmilling

The one Sawmill operated by Messrs Smith and Lord did sterling work alleviating the shortage created by a sudden increase in demand. Output figures which the owners do not consider quite complete are as follows for the years 1949 and 1950.

1949	*1950*
62,355 bd. ft.	72,218 bd. ft.

These figures do not reflect full output of the mill. Construction was being carried out in both years resulting in certain months during which little sawing was done.

In addition, log supply is causing some concern due to the Transinsular Road not being made. This is most unfortunate meaning loss of Revenue to Government as well as placing Messrs Smith & Lord in a position where they will soon be unable to operate.

From these figures it can be seen that the Island cannot afford to hold any stocks for seasoning. An encouraging aspect of this firm's work was the appreciable outturn of Gomier Stock (Dacryodes Excelsa Vahl) a timber which, in the past, has been despised as too liable to termite attack. This is not confirmed in properly sawn and seasoned heartwood stock used out of contact with soil and water although it is too early to be dogmatic. The potential of Gomier is enormous, given roads.

Cordwood

Felling for cordwood continued, mainly on private lands up the Imperial Road. Crown Land Cordwood sales were prohibited. Export of Cordwood continues but to a lesser degree than in 1949, due to increased consumption at home and to shipping difficulities.

Timber Protection. Little effort has been made by the public, despite propaganda, to use preservatives, proper seasoning methods or termite controls. The lead given by those who should know better is nonexistent. As a result the common man does not bother.

Minor Forest Products. Limited production of Carib baskets continues, some being exported. No minor products of importance are utilized.

Revenue. Revenue has not been promising as is shown below. This is almost entirely due to inaccessibility of Crown Lands coupled with the fact that it is so easy to steal from private lands and get away with it, that to buy from Crown Lands is unnecessary. The Royalty charges, when compared with ruling prices, and the return available to the sawyer or charcoal burner, are extremely reasonable. Until there are more roads through Crown Lands and the forest is recognised as a source of revenue, that revenue will not be forthcoming.

Efforts were made by all staff to promote sales of Crown Land produce not only to increase revenue but to lighten the burden on private forest.

Sales of Forest Produce		$311.62
Other revenue, compensation etc. (not including fines in court)		119.49
	Total	$431.11

Expenditure.

Capital	$4,288.28
Recurrent	$16,811.37

The relatively small Capital Expenditure is mainly due to reservation not having progressed as fast as was hoped.

Forest Stations. Two Forest Guards cottages were completed and occupied. A Scheme requesting $19,200 for further building was submitted to the Secretary of State.

Sylviculture And Research. No progress was made in the very modest programme due to Assistant Conservator of Forests having his hands full and to his absence on leave.

Soil Conservation. Education continues but the lead by estate owners is poor as is shown by the lack of interest shown in Private Forestry by the majority.

Preservation of Nature. Attempts were made to enforce the existing game laws. Dynamiting of rivers and use of fish poisons continue to be the chief cause of incomplete stocking of the rivers. Control is attempted. No court cases were taken; one inconclusive case was reported.

Forest Squatting Control Scheme. This scheme, reported as being in the preparatory stage in the 1949 report, was half approved in the Spring, too late to be of any use during the annual "gardening" season. One Surveyor, a Conservation Officer, six Conservation Instructors and a Clerical Assistant were appointed. Prior to the departure of the Assistant Conservator of Forests on leave a start was made in compiling a squatter's register, some 1,400 persons coming forward and giving their names. It is estimated that this number represents about 50% of the squatters. A system to accelerate Crown Lands disposal was devised but reaction by the public was slow. The main bars to quicker sales were inability on the part of the peasant to save the lump sum for survey fees and a vacancy for a surveyor which could not be filled. It is hoped that in 1951 these defects will be rectified.

Captain Thelwell, O.B.E., Late Commissioner of Lands, Jamaica, submitted a report upon Squatting and allied problem, after a visit in March-April.

Visit by Forestry Adviser. A visit by the Forestry Adviser to Secretary of State coincided with Captain Thelwell's visit.

Acknowledgement. The Caribbean Forester is gratefully acknowledged as is a copy of The Natural Vegetation of the Windward and Leeward Islands by Dr. J. S. Beard, published in the Oxford Forestry Memoirs. The Trinidad Annual Report for 1948 is also received with thanks.

Leave. The Assistant Conservator of Forests was on leave and sick leave from July 14 — December 15, and had not returned by the end of the year.

Note: $ W.I. — 4s. 2d.

(Sgd) L. L. DE VERTEUIL.
Chief Forest Officer.

(Sgd) J. A. N. BURRA,
Assistant Conservator of Forests.

APPENDIX II — AGRICULTURAL LEGISLATION

Statutory Rules & Orders 1950

The Contagious Disease (Cattle) Act 1877 (S.R. & O. No. 14/50).

The compensation for building or growing crops Regulations. 1950 (S.R. & O. No. 19/50).

Price Control Order (Amendment No. 4) Order 1950 (Lumber) (S.R. & O. No. 29/50)

ORDINANCES 1950

Forest Soil & Water Conservation (Amendment) Order 1950. (No. 5 of 1950).

An ordinance to amend the Labour Statistics Ordinance 1948. (Ordinance No. 5 of 1948) Ordinance No. 11 of 1950.

APPENDIX III

REPORT ON GOVERNMENT OWNED ESTATES

(ε) Melville Hall Estate

This estate was sold to the Colonial Development Corporation and handed over on April 14th. The estate was first acquired in 1945 to provide a site for an airport, approximately 80 acres being retained for this purpose. (This area was not included in the sale). The remaining portion of the estate comprising some 900 acres of which 180 were under cultivation was put under the charge of the Agricultural Department and was operated on a commercial basis.

A report on the working of the Estate from January — April 14th is detailed below:—

Coconuts.— Harvesting and converting the nuts into copra was the main activity. The total number of nuts gathered was 108,686 used up as follows:

Rejects — fed to pigs	920		
Made into copra	107,766	—	108,686

All the copra was manufactured in two Malayan type copra driers.

Total weight of copra made	20 tons	6 cwts.	2 qrs.
Copra manufactured 1949 and sold in 1950	4 ,,	14 ,,	3 ,,
Total weight of copra sold	25 ,,	1 ,,	1 ,,

Number of nuts used per ton of copra 5,320

Dwarf Coconuts.— No new plantings were made but the established trees continued to show rapid growth and were vigorous and completely free from disease.

Citrus.— The Grapefruit and Orange plot was cutlassed and clipping used for mulch around the trees. Approximately 3 acres of Marsh seedless, Foster Pink and Thompson Pink Grapefruit were planted.

Livestock

Cattle.—Six working oxen were maintained for draft purposes. Four cows, one heifer and one cow calf were transferred to the Agricultural Stations at Londonderry and Portsmouth.

Pigs.— One boar, 2 sows, and 5 young pigs were sold.

Buildings

These were in reasonably good shape and only slight repairs were necessary at the works.

Labour

All the labour required was easily obtainable.

(b) **Goodwill Estate.**—

This estate comprising some 435 acres which is adjacent to the capital town of Roseau, was acquired by Government in 1946, for the purpose of implementing various schemes to be financed under the Development and Welfare Act. It was handed over to the Department until such time as the various schemes were implemented.

The following areas have been released to date:

(a) 80 acres to the Central Housing and Planning Committee;

(b) 11 acres to Colonial Development & Welfare;

(c) 3 acres to Public Works Department;

(d) 3 acres to Caribee Products Ltd;

The report on the year's working is detailed below:

General.— Work carried out during the year included (a) operation of the Rum Factory for approximately two months after which, due to mechanical breakdown, the factory was not worked; (b) maintenance of Lime cultivation; (c) sale of tenants' canes to outside factories during the non-operational period of the Estate Factory; (d) rent collection from Pottersville Housing Area.

Pottersville Land Rent:—The rental rates of house lots have remained as formally but as usual great difficulty was encountered in the collection of these rents. Rents collected for the year amounted to $1,548.94, arrears being $1,821.16.

Lime Cultivation:— The existing fields were maintained in good condition throughout the year, no artificial fertilizers were given but the year's crop amounted to 562 barrels of Ripe Limes and 96,1/16 barrels of green limes netting a total of $2,563.54.

Cane Cultivation:—All cane cultivations on this Estate are carried out on the half share system and in the course of the year attempts were made to get tenants to grow more food crops by encouraging them to have at least 1/3 of their holdings under ground provision.

The sum of $2,618.57 was paid to tenants during the year, this amount being the half share that they are entitled to for canes suppiled.

Rum:—The worn out boiler gave way earlier in the year and no rum was manufactured after mid February; however tenants' canes were sent to Belfast, Canefield and Check Hall Estates.

Rum manufactured amounted to 4,550 gallons. Sales for 1950 amounted to 8828 gallons, stock on hand amounted to 17,509 gallons. There was still some difficulty in obtaining storage space and some of the rum had to be bonded in Roseau.

Machinery:—There was no surprise when the boiler was considered unsuitable and had to be condemned for it had long outlived its usefulness. A new boiler was purchased during the year but had not been installed by a year's end, as certain essential accessory in the equipment could not be obtained.

Aqueduct:— As a consequence of heavy rains and sudden floods in July, the wooden frames in the aqueduct gave way and some major repairs had to be effected. The wooden sections were replaced by rubble masonry and are now of a more permanent character. The canal functioned satisfactorily for the remainder of the year.

Fish Pond:— A small pond was built and stocked with Malayan perch, Tilapia Mosambica, which were obtained from the Department of Agriculture, St. Lucia. These fish have grown and multiplied rapidly and although they were introduced to the pond in August it was possible before the year's end to distribute some fish to individuals for stocking their own ponds.

Fodder Plots:— The fodder plots consisted of plots of Elephant grass, Guinea grass and Tropical Kudzu. These were maintained in good condition and gave satisfactory yields except in the dry season when it was necessary to augment the fodder supply by cane tops and other forage material.

APPENDIX IV.
RAINFALL RETURNS DOMINICA 1950

Stations	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1. Botanic Gardens	9.87	3.59	3.75	1.89	10.37	12.64	10.00	8.18	4.90	14.14	8.00	3.62	90.95
2. Bath Estate	9.90	4.91	4.44	2.21	8.70	10.17	10.03	8.12	5.39	13.16	6.14	3.19	86.36
3. Blenheim	12.18	13.23	10.35	2.35	8.17	12.16	9.11	9.89	6.55	17.04	13.31	5.39	119.73
4. Canefield	8.75	3.77	2.68	1.71	9.47	12.55	11.26	9.29	9.43	15.74	5.49	6.09	96.23
5. Clark Hall Estate	16.34	6.22	6.15	2.49	9.45	14.50	11.50	12.12	10.60	13.65	7.20	2.20	112 42
6. Colihaut Agric. Station	9.37	2.34	2.91	.24	3.06	8.92	6.15	8.53	2.93	9.78	6.94	2.71	63.93
7. Experiment Station	12.60	4.32	5.06	1.91	9.90	12.18	8.23	10.20	7.35	16.48	7.24	5.79	101.26
8. Grand Bay Station	17.93	6.64	4.70	6.07	8.77	10.36	8.99	10.21	10.36	22.04	10.17	7.97	124.21
9. La Plaine Agri. Station	10.31	5.66	3.37	8.48	7.02	13.24	5.95	12.40	18.78	34 07	13.77	9.42	142.87
10. Londonderry Agric. Station	11.42	12.65	2.98	2.65	6.18	13.43	6.62	14.80	9.39	18.19	24.30	3.15	125.76
11. Picard Estate	11.58	14.21	5.26	5.04	5.76	14.11	14.68	8.88	13.00	11.08	6.78	6.66	117.04
12. Portsmouth Agric. Station	14.60	11.65	6.23	3.97	6.39	15.43	10.06	10.10	9.61	12.86	9.54	8.57	119.01
13. Pointe Mulatre	18.51	6.04	1.28	8.18	9.16	12.13	6.77	13.24	14.19	33.31	15.78	5.90	145.04
14. Ridgefield	17.54	8.69	6.57	4.54	12.67	15.37	15.00	9.01	9.47	21.23	9.14	6.53	136.06
15. Stowe	17.37	8.88	3.73	6.19	9.03	11.07	9.57	10.93	13 78	22.38	11.86	7.08	131.87
16. Sylvania	30.10	10.30	11.80	5.60	16.20	23.30	19.20	16.00	18.30	26.50	10.70	11.00	199.00
17. Shawford	47.37	16.86	15.43	5.71	14.04	11.08	17.64	19.73	15 39	16.03	9 23	8.79	197.35
18. Cocoa Propagation Station, Hillsborough	13.04	4.03	5.38	2.05	6.70	14.13	10.66	10.87	7.17	10.58	4.84	4.37	93.82
19. Soufriere Estate	6.53	5.46	3.44	3.24	10.20	11.24	7.64	7 89	8.54	19.35	7.26	4.34	95.13
20. Gomier Estate	18.01	8.35	8.11	3.90	14.91	15.32	13.67	9.55	7.85	23 61	8.96	7.26	139.51
21. Delices	12.45	7.91	3.77	7.48	10.35	11.36	7.46	13 79	11.94	33.80	15.07	6.79	143.17

RAINFALL AT BOTANIC GARDENS DOMINICA 1931 — 1950

	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	Monthly Mean Rainfall
January ..	1.47	5.47	7.30	4.81	2.37	3.46	13.24	6.73	4.13	1.67	5.00	4.16	5.70	4.24	1.76	6.12	9.23	5.95	2.06	9.87	5.24
February ..	1.05	1.57	2.13	1.70	1.59	2.50	3.40	1.43	2.84	1.45	.47	2.25	1.01	6.89	9.14	5.80	2.07	4.54	6.44	3.59	3.09
March ..	.59	1.56	2.37	3.36	6.90	.82	1.34	2.69	4.38	2.16	2.05	.97	5.46	1.89	1.29	1.47	2.75	1.48	2.73	3.75	2.50
April ..	.51	2.33	2.03	2.91	1.45	3.04	2.61	.72	5.62	1.00	2.82	7.14	3.34	1.65	1.11	2.88	2.61	2.11	1.46	1.89	2.46
May	1.70	5.07	2.26	3.82	4.27	2.34	1.48	1.41	.86	1.34	5.53	4.86	3.20	8.55	1.95	3.18	5.53	4.60	2.58	10.37	2.74
June	9.98	10.72	7.05	2.59	5.04	6.47	6.57	19.56	4.90	4.65	5.39	9.18	6.25	7.20	6.21	7.04	4.67	6.12	13.02	12.64	7.76
July	18.45	8.05	12.30	9.54	13.47	18.48	5.60	13.44	7.18	7.97	13.94	13.86	6.10	12.98	11.17	6.15	11.73	12.84	11.41	10.00	11.23
August ..	17.44	7.23	7.94	7.61	8.87	10.38	6.20	27.92	6.96	6.96	7.52	11.13	10.93	9.19	9.05	9.44	5.73	8.41	9.69	8.13	9.84
September ..	13.51	6.13	11.51	4.08	12.93	11.14	4.40	10.77	6.52	2.55	10.62	11.76	7.99	5.74	15.43	8.34	3.09	8.67	12.75	4.90	8.89
October ..	9.71	6.72	9.26	3.89	5.43	7.65	3.74	4.48	15.42	9.00	6.98	5.91	9.69	6.39	10.90	4.40	4.02	8.40	9.32	14.14	7.77
November ..	11.90	13.83	11.04	5.58	3.39	12.14	20.85	12.34	5.91	10.97	12.45	24.82	5.38	9.59	2.98	13.91	7.10	9.37	2.68	8.00	10.21
December ..	7.56	5.21	7.03	9.46	6.24	10.84	5.43	6.14	3.57	9.96	4.81	8.47	6.60	6.81	4.33	4.34	8.67	6.97	5.81	3.62	6.59
Totals ..	93.87	73.89	82.22	59.35	71.95	89.26	74.86	107.63	68.29	59.68	77.58	104.51	71.65	81.12	75.32	73.07	72.20	79.46	79.95	90.95	

AVERAGE RAINFALL 1931 — 1950 — 79.34 Inches

APPENDIX V.
METEOROLOGICAL SUMMARY, BOTANIC GARDENS, DOMINICA, 1950

YEAR 1950	PRESSURE Corrected & Reduced to 32°F.. M.S.L.				TEMPERATURE								Relative Humidity		Rainfall
	Highest	Lowest	Means		Absolute		Mean Values						Means		Amount
					Max.	Min.	Max.	Min.	Dry Bulb		Wet Bulb				
	IN	IN	9 a.m.	3 p.m.	—	—	—	—	9 a.m.	3 p.m	9 a.m.	3 p.m.	9 a.m.	3 p.m	—
	IN	IN	IN	IN	°F	°F	°F	°F	°F	°F	°F	°F	%	%	INS
January	30.06	29.85	30.00	29.93	84	65	82	68	75	79	70	73	79	71	9.87
February	30.06	29.85	29.98	29.91	85	67	84	68	76	81	72	76	82	77	3.59
March	30.10	29.92	30.03	29.96	85	66	84	67	76	82	71	74	77	67	3.75
April	30.05	29.89	29.99	29.92	88	66	87	68	80	84	75	76	75	67	1.89
May	30.05	29.90	29.98	29.86	89	68	88	70	81	84	75	77	70	69	10.37
June	30.16	29.80	30.01	29.93	88	68	87	73	81	84	75	76	73	66	12.64
July	30.05	29.84	30.00	29.97	89	70	87	73	82	85	76	79	76	72	10.00
August	30.04	29.73	29.91	29.84	90	70	87	74	82	86	78	81	80	78	8.18
September ..	30.06	29.79	29.94	29.88	90	72	88	74	82	86	76	79	73	70	4.90
October	30.04	28.88	29.91	29.77	90	71	85	72	81	83	76	77	76	74	14.14
November ..	30.84	28.76	29.86	29.58	89	70	86	72	81	84	76	77	73	68	8.00
December	30.90	29.79	29.97	29.87	86	68	84	71	78	82	74	75	79	65	3.62
Year Average ..	30.20	29.67	29.96	29.87	88	68	86	71	79	83	75	77	76	70	7.58

Highest Barometer Reading .. 30.90ins. on 4th December.
Lowest „ „ .. 28.76ins. on 7th December.
Highest Maximum Temperature .. 90°F on 25th August, 4th and 11th September and 2nd October.
Lowest Minimum Temperature .. 65°F on 23rd, 28th and 30th January.
Greatest Rainfall in 24 hours .. 5.96ins on 15th May.